

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

WRITTEN OPINION
(PCT Rule 66)

Applicant's or agent's file reference 1007.P056PCT/KJT/ayu		Date of mailing (day/month/year) 13 MAY 2004
International Application No. PCT/SG2003/000204	International Filing Date (day/month/year) 29 August 2003	Priority Date (day/month/year) 29 October 2002
International Patent Classification (IPC) or both national classification and IPC Int. Cl. 7 H01L 21/50, 21/304		
Applicant ADVANCED SYSTEMS AUTOMATION LIMITED et al		

1. This written opinion is the **first** drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

I	<input checked="" type="checkbox"/> Basis of the opinion
II	<input type="checkbox"/> Priority
III	<input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	<input type="checkbox"/> Lack of unity of invention
V	<input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	<input type="checkbox"/> Certain documents cited
VII	<input type="checkbox"/> Certain defects in the international application
VIII	<input checked="" type="checkbox"/> Certain observations on the international application

3. The **FINAL DATE** by which the international preliminary examination report must be established according to Rule 69.2 is:
28 February 2005

4. The applicant is hereby invited to reply to this opinion.

When? See the Reply Due date indicated above. However, the Australian Patent Office will not establish the Report before the earlier of (i) a response being filed, or (ii) one month before the Final Date by which the international preliminary examination report must be established. The Report will take into account any response (including amendments) filed before the Report is established.

If no response is filed by 1 month before the Final Date, the international preliminary examination report will be established on the basis of this opinion.

Applicants wishing to have the benefit of a further opinion (if needed) before the report is established should ensure that a response is filed at least 3 months before the Final Date by which the international preliminary examination report must be established.

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3.
For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis.
For an informal communication with the examiner, see Rule 66.6.

Name and mailing address of the IPEA/AU

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Authorized Officer

I.A.BARRETT

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I. Basis of the opinion

1. With regard to the elements of the international application:*

the international application as originally filed.

the description, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of

the claims, pages , as originally filed,
pages , as amended under Article 19,
pages , filed with the demand,
pages , received on with the letter of

the drawings, pages , as originally filed,
pages , filed with the demand,
pages , received on with the letter of

the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

the language of publication of the international application (under Rule 48.3(b)).

the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

contained in the international application in printed form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description, pages

the claims, Nos.

the drawings, sheets/fig.

5. This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-30	YES
	Claims	NO
Inventive step (IS)	Claims	YES
	Claims 1-30	NO
Industrial applicability (IA)	Claims 1-30	YES
	Claims	NO

2. Citations and explanations

Citations:-

- (a) US 2002/0073575
- (b) US 6250990
- (c) EP 1028455
- (d) WO 2002/035585
- (e) JP 2001-060566
- (f) JP 09-162270

Citations (a),(b) and (c) all disclose singulation of packaged semiconductor devices where a packaged substrate is moved from a loading location to a cutting location, cutting is performed in a first, then a second, direction, followed by transporting from the cutting location to an unloading location where singulated packages are unloaded. This is different from the invention of independent claims 1 and 17. Claims 1 and 17 require the packaged substrate to be partially cut while mounted on a first movable mount, then transferred to a second movable mount where further cutting produces singulated packages, which are then unloaded at an unloading location. The prior art does not disclose transferring the packaged substrate from a first to a second mount between cutting steps. However, this appears to be a logical step taken by a skilled worker wishing to streamline the singulation process of the prior art. Claims 1 and 17 lack an inventive step in the light of citations (a),(b) and (c). Similarly, claims 2-16 and 18-30 lack inventive step as these claims contribute features well known in the art or that would be within the capabilities of a skilled worker in the art. In particular, there does not appear to be any inventive step in choosing a water jet as the cutting tool.

Citations (d),(e) and (f) all disclose use of water jet devices for cutting in an analogous application. A person skilled in the art seeking to overcome the problems described at pages 1-3 may have chosen to combine the disclosures of any one of citations (a),(b) and (c) with any one of citations (d),(e) and (f) to arrive at the invention of claims 3-6,20-23,27-29. Claims 3-6,20-23,27-29 would lack inventive step in the light of the combined disclosures of these citations.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- (a) It is not clear whether claim 6 has been correctly appended to claim 7.
- (b) There is no antecedent for the water jet in claim 22 or 23.
- (c) The claims are not fully supported by the description. Page 1 line 6-8 states that the invention relates to semiconductor singulation using a water jet system. The claims are not limited to *water jet* singulation, and include all forms of singulation (eg dicing saws).